

PERCEPTION AND KNOWLEDGE OF DENTAL HOUSE SURGEONS ABOUT MULTIDISCIPLINARY TREATMENT AND COORDINATION FOR SUCCESSFUL DENTAL TREATMENT

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ABSTRACT

Background

Various departments of many dental colleges in India have been functioning as separate entities with limited coordination between them.

Purpose

A pilot study was undertaken with an aim to assess the perception and knowledge of dental interns toward multidisciplinary treatment and coordination for successful dental treatment.

Subjects and Methods

Dental interns from a dental college in Chennai (South India) participated in the study. A 17-item self-administered, structured closed-ended questionnaire was used to collect the data. Four questions assessed the perception and 12 questions assessed the knowledge.

Results

Among 100 interns who participated in the study, 84% reported that they lacked training in an interdisciplinary approach. Approximately, 67% reported that the curriculum should be designed to include interdisciplinary training. Nearly, 69% reported that specialist from different specialty should be posted in one interdisciplinary department. Around 60% reported that they did not have the confidence of treating the patient as a whole. When the overall mean scores were considered, the highest scores were obtained for endodontic related questions (95.3) and the lowest for the orthodontic related questions (83.6).

Conclusions

Dental interns perceived that they lacked training in a multidisciplinary treatment approach. Hence, dental colleges should include interdisciplinary treatment as part of the undergraduate course.

KEYWORDS: *Interdisciplinary Dentistry, Comprehensive Dentistry, Interdepartmental Coordination & Structured Collaboration*

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INTRODUCTION

Each dental specialist has a role to play in the holistic treatment of the mouth. This can be achieved with a sound interdisciplinary treatment plan. [1]

BDS students in their clinical years are posted in various departments for short periods of time to acquire clinical abilities of that particular department. Hence, they are poorly prepared to undertake comprehensive treatment planning. [2, 3, 4] For example, a student completing posting in the Department of Prosthodontics has an opportunity to provide the patient with the replacement of missing teeth. Multidisciplinary treatment requires good collaboration between all specialties. The planning and execution of the treatment should be structured and coordinated, and the vision should be one. [5,6,7]

Interdisciplinary collaboration has become essential for better treatment outcomes. Interdisciplinary planning should regard the patient as a whole. [8] Each specialist involved is a very important part of the team. [9] The restorative dentist has to coordinate between team members to achieve the desired outcome. [5] He should begin with the endpoint in view [10] A good team spirit among the specialists is the key to success of the final outcome. [11]

The dental student should be taught to communicate with other professionals in order to provide the best treatment possible for each patient. [12]

We carried out a pilot study with an aim to assess dental interns' perception and knowledge toward multidisciplinary treatment and coordination.

SUBJECTS AND METHODS

A cross sectional questionnaire study was conducted on dental interns of a dental college in Chennai. Clearance was obtained from the Institutional Ethics Committee to conduct the study.

Dental interns who were willing to participate were included in the study. Written consent was obtained from study participants after explaining in detail about the study. The instrument used was a self administered, structured, closed ended questionnaire measuring the dental interns' perception, and knowledge toward interdepartmental coordination for successful dental treatment.

Case scenarios, reporting to each Department and requiring interdepartmental consultation were included in the questionnaire. The validity of the questionnaire was maintained by taking the opinion of subject experts from each department. After the validity assessment, out of 20 original questions, 17 were retained without any change, one was modified, and three were deleted.

The modified questionnaire consisted of 17 items [Appendix 1]. Part A comprised of four questions related to the perception of dental interns toward an interdisciplinary approach in prosthodontics (options yes/no). Part B comprised of 13 questions related to knowledge of dental interns regarding interdisciplinary approach. Part B was further divided into four domains: General (2 questions), Endodontics (3 questions), Orthodontics (3 questions), and Prosthodontics (12 questions).

The questionnaire was administered to eleven outgoing batch of interns to check the comprehensibility of the questions. These interns were excluded from the main study.

All the interns of the 2016-2017 batch who had completed their final year were assembled in a classroom and were briefed about the study. Those who consented to fill up the questionnaire. Each “correct” answer to a question was awarded one point while an “incorrect” response was given zero. Questions that were not answered were given zero points. Responses that were overwritten were excluded from analysis. The scores were calculated based on correct responses to the 13 items (knowledge questions). Based on the interns’ outlook regarding interdisciplinary approach their mean scores were calculated.

The collected data were entered into Microsoft Excel. Descriptive analysis was performed by calculating the frequencies, percentages, and mean values. The analysis was performed using the Statistical Package for the Social Sciences version 16.0 (SPSS Inc., Released 2007, Chicago, Illinois, USA).

RESULTS

A total of 100 interns participated in the study female (n = 63) and male n = 39) with the response rate of 93.6% (Table 1). 84% interns (84%) reported that they lacked training in an interdisciplinary approach, and 16 interns (16%) reported they had adequate training. 100 interns (67%) reported that the curriculum should be designed to include training for an interdisciplinary approach to dentistry, and 13 interns (13%) reported that the curriculum should not include training for an interdisciplinary approach. A total of 69 interns (69%) reported that specialist from different specialty should be posted in one interdisciplinary department and 31 interns (31%) reported that specialist from different specialty should not be posted in one interdisciplinary department. A total of 63 interns (63%) reported that they had the confidence of treating the patient as a whole and 37 interns (37%) reported that they did not have the confidence of treating the patient as a whole.

When the overall mean percentage of correct responses for different departments (general domain, endodontic, paedodontics, oral surgery, oral medicine, periodontics, orthodontics, and prosthodontics) were considered the highest scores were obtained for the endodontics related questions (88.5%) and the lowest for the orthodontics domain (69%).

DISCUSSIONS

Dental education faces a number of challenges in its efforts to train dental graduates who will interact with and be understood by other professionals.

The results of the present study show clearly that the majority of dental interns perceived that they lacked training in a multidisciplinary treatment approach.

The results of the study highlighted that the highest overall mean scores were for Endodontics related questions (86.5%). As per the curriculum dental students are exposed to the department of Endodontics from second year itself, this may be one of the reasons for the highest mean score in Endodontics related questions.

The next high overall mean score was obtained for the Prosthodontics related questions (80%), which may have been as the students may have encountered these situations more frequently.

The lowest overall mean score was obtained for orthodontics related questions (69%).

Questions related to Prosthodontics and orthodontics based interdisciplinary questions seemed to be an area of less knowledge and needs to be stressed.

The lowest mean score was for the orthodontic domain (69%). There appeared to be a lack of awareness related to the treatment plan for a patient with spaced anterior teeth. Case based learning should be incorporated to expose students to a variety of cases. The results of our study are in agreement with those of Rock et al. (13) according to whom students have good levels of basic orthodontic knowledge, but are less successful when asked to apply that knowledge to clinical situations.

The limitation of our study was that as it was conducted only in one dental institution. Hence the results of the study should be interpreted with caution. However, these results can serve as a baseline data. Further studies should be carried out to assess the knowledge of dental interns across different dental institutes.

Table 1: Percentage of Correct Answers by the Dental Interns

S. No	Question	%
1	Do you feel there is a lack of training in interdisciplinary approach for treatment of patients in your institution?	84
2	Do you feel the undergraduate curriculum should be designed in such a way that you receive training for an interdisciplinary treatment approach?	67
3	Do you feel that specialists from different specialities should be posted in one interdisciplinary department for treating patients who visit the dental college hospital?	69
4	Do you think you are confident in carrying out comprehensive dental treatment?	63
5	What would be your sequence of treatment for a patient who reports for replacement of missing teeth if he presents with carious teeth, root stumps and missing teeth?	77
6	A patient aged 25 years reports for crown placement on endodontic ally treated 47. Radiographic examination reveals impacted 48. How do you proceed?	86
7	A partially edentulous patient requires replacement of missing teeth. Examination reveals a mandibular kennedy's class I situation with supra erupted maxillary posteriors with deep caries. How do you proceed?	91
8	The design of removable partial denture plays an important role in the future periodontal health of abutment teeth.	98
9	What would be your line of treatment for a patient aged 20 years who reports to you with missing 36 and crowding of teeth in mandibular anterior region?	85
10	A patient aged 30 years requires replacement of missing 11. Examination reveals that the patient has a severe deep bite. What would be your line of treatment?	66
11	If a 40 year old patient with spaced anteriors and good periodontal health reports for the closure of spacing how would you proceed?	56
12	What is your outlook regarding oral prophylaxis being carried out before any prosthodontic treatment (except complete denture) for those with poor oral hygiene?	98
13	How important do you think is a periodontal opinion of abutment teeth for replacement of multiple missing teeth if the abutment appears to be periodontally compromised?	58
14	A patient who is completely edentulous requires replacement of missing teeth. Intra oral examination reveals that the patient has a white patch on the buccal mucosa regarding which he is not aware of. How would you proceed?	80
15	Would you contemplate suggesting preprosthetic surgery to improve stability of complete denture for a completely edentulous patient with severe resorbed ridges.	80
16	If a completely edentulous patient requiring a complete denture reports with prominent genial tubercle what would be your first line of treatment?	51
17	Do you feel it is necessary to provide diet counselling and teach the correct tooth brushing technique to a ten year old child who reports for treatment of multiple decayed teeth?	100

CONCLUSIONS

The dental curriculum should be designed to include multidisciplinary treatment approach and specialists from different specialties should be posted in a comprehensive dental department. Clinical dental students can be posted in this department and receive training to treat the patient holistically with guidance from different specialists. This will open their minds and equip them to undertake integrated treatment for their patients.

Each case can be presented to a panel of experts from different specialties and a comprehensive treatment plan can be decided through constructive discussions. This can be carried out by the student under the guidance of the panel members. Such a venture will be vastly helpful for the student to make a lifelong habit of such an exercise.

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APPENDICES

Questionnaire

Part A: Questions related to perception of dental students toward interdisciplinary approach in prosthodontics

1. Do you feel lack of training in interdisciplinary approach?

a. Yes b. No

2. Do you feel the curriculum should be designed in such that you receive training for an interdisciplinary approach to dentistry?

a. Yes b. No

3. Do you feel that specialist from different speciality should be posted in one interdisciplinary department?

a. Yes b. No

4. Do you think you are confident in treating a patient as a whole / comprehensively?

a. Yes b. No

Part B: Questions related to knowledge of dental students toward interdisciplinary approach in prosthodontics

5. What would be your sequence of treatment for a patient who reports for replacement of missing teeth if he presents with carious teeth, root stumps and missing teeth?

1. Extraction of the root stump

2. Restoration of the carious teeth

3. Replace the missing teeth

a. 1, 2 and 3

b. 1, 3 and 2

c. 3, 2 and 1

d. 3, 1 and 2

6. A patient aged 25 years reports for crown placement on endodontically treated 47. Radiographic examination reveals impacted 48. How do you proceed?

a. Advice disimpaction of 48 and then proceed with crown preparation in 47.

b. Directly proceed for crown preparation in endodontically treated 47.

7. A partially edentulous patient requires replacement of missing teeth. Examination reveals a mandibular Kennedy's class I situation with supra erupted maxillary posteriors with deep caries. How do you proceed?

a. Endodontic consultation and management of supra erupted maxillary posteriors before replacement of missing mandibular teeth.

b. Proceed directly with replacement of missing teeth.

8. The design of removable partial denture plays an important role in the future periodontal health of abutment teeth.
- a. True
 - b. False
9. What would be your line of treatment for a patient aged 20 years who reports to you with missing 36 and crowding of teeth in mandibular anterior region?
- a. Directly proceed for replacement of missing 36.
 - b. Consult an orthodontist to correct crowding and then discuss regarding replacement of missing 36.
10. A patient aged 30 years requires replacement of missing 11. Examination reveals that the patient has a severe deep bite. What would be your line of treatment?
- a. proceed for replacement of missing 11.
 - b. Consult an orthodontist to correct the severe deep bite and then proceed for replacement of missing 11.
11. If a 40 year old patient with spaced anteriors and good periodontal health reports for the closure of spacing how would you proceed?
- a. Proceed for orthodontic opinion and management of space closure.
 - b. Proceed for diagnostic wax up and space closure.
12. What is your outlook regarding oral prophylaxis being carried out before any prosthodontic treatment (except complete denture) for those with poor oral hygiene?
- a. Not important at all.
 - b. Important for all such patients
13. How important do you think is a periodontal opinion of abutment teeth for replacement of multiple missing teeth if the abutment appears to be periodontally compromised?
- a. Not important at all.
 - b. Important for most patients.
 - c. Important for all patients.
14. A patient who is completely edentulous requires replacement of missing teeth. Intra oral examination reveals that the patient has a white patch on the buccal mucosa regarding which he is not aware of. How would you proceed?
- a. Diagnose and treat the white lesion before proceeding for fabricating a complete denture.
 - b. Ignore the white patch and proceed for complete denture fabrication.

15. Would you contemplate suggesting preprosthetic surgery to improve stability of complete denture for a completely edentulous patient with severe resorbed ridges.

a. Yes

b. No

16. If a completely edentulous patient requiring a complete denture reports with prominent genial tubercle what would be your first line of treatment?

a. Surgical

b. Providing relief

c. Direct fabrication of complete denture

17. Do you feel it is necessary to provide diet counselling and teach the correct tooth brushing technique to a ten year old child who reports for treatment of multiple decayed teeth?

a. Yes

b. No